THE LAW OFFICES OF
MICHAEL R. GARDNER, P.C.
ATTORNEYS AT LAW
1150 CONNECTICUT AVENUE, N.W.
SUITE 710
WASHINGTON, D.C. 20036
(202) 785-2828
FAX (202) 785-1504

June 29, 1994

By Hand

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, NW
Washington, DC 20554

Re: Notice of Inquiry
Competition in the Market for the Delivery
of Video Programming
CS Docket No. 94-48

Dear Mr. Caton:

On behalf of CellularVision of New York, L.P., enclosed please find an original and four (4) copies of its Comments filed in response to Notice of Inquiry in the above-referenced proceeding.

Please direct any questions regarding this matter to the undersigned.

Sincerely,

Michael R. Gardner
Counsel, CellularVision of New York, L.P.

Enclosures

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
Implementation of Section 19 of the Cable Television Consumer Protection and Competition Act of 1992	)	CS Docket No. 94-48
Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming	)	

COMMENTS OF CELLULARVISION OF NEW YORK, L.P.

CellularVision of New York, L.P. ("CVNY"), by its attorneys, hereby files comments in response to the Notice of Inquiry ("NOI") released by the Commission in the above-referenced proceeding on May 19, 1994, regarding the state of competition to cable television service provided by alternative distribution technologies.

CVNY, a partnership majority owned and controlled by the founders of Suite 12 Group,[1] holds the only commercial Local Multipoint Distribution Service ("LMDS") license issued by the Commission. Pursuant to this license, CVNY currently offers a 49-channel alternative to cable television service to consumers in its New York service area for only $29.95 per month. CVNY

[1] Suite 12 Group is the inventor of the CellularVision technology for the Local Multipoint Distribution Service, a high quality, low cost multichannel video distribution alternative.

believes that the nationwide deployment of LMDS will significantly enhance the current level of competition to cable by providing consumers throughout the United States with a high quality, low cost video alternative to cable.

Introduction

As the Commission notes in the NOI, a primary goal of the Cable Act of 1992 was to promote increased competition in the delivery of cable television services. However, until such competition exists, Congress has mandated that the Commission protect the interests of subscribers by ensuring that the rates charged by such systems are reasonable. The Commission describes rate regulation as a "transitional mechanism until competition develops and consumers have adequate multichannel video programming alternatives." See NOI, para. 2. The Commission has recognized that "only a tiny percentage of the approximately 11,000 cable systems nationwide face effective competition, as that term is defined by the 1992 Cable Act,"[2] and thus the "vast majority" of systems are subject to rate regulation. Accordingly, both the Commission and the cable industry have devoted an enormous amount of resources to the implementation of the Cable Act's rate regulation provisions. Importantly, as "effective competition" develops in markets throughout the country, the Commission recognizes in the NOI that it will be

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[2] Implementation of Sections of the Cable Television Consumer Protection and Competition Act, Rate Regulation, Report and Order and Further Notice of Proposed Rulemaking, 8 FCC Rcd 5631, note 30 (1993).

able to withdraw from the regulation of cable rates. See NOI, para. 15.

In view of the above, the great challenge for the Commission is to take actions that will encourage the most immediate development of competitive alternatives to cable television service — competitive alternatives which ultimately will allow cable rates to be regulated by market forces, rather than by the government. In view of the gross lack of competition found in today's cable marketplace, by promptly licensing the proven LMDS technology throughout the nation, the Commission will provide consumers with meaningful choices between truly competitive video outlets, thus ensuring the most effective means to regulate the cable monopoly: through consumer-driven robust competition in the multichannel video distribution marketplace.

Local Multipoint Distribution Service

The CellularVision technology for LMDS is a revolutionary multichannel video delivery system that the Commission discussed in the NOI (at paras. 26-28) as a potential source of competition to cable.[3] The

[3] The CellularVision technology is capable of providing an array of interactive video, telephony and data services that are discussed in greater detail in Suite 12's filings in CC Docket 92-297. Given this range of potential services, the low cost, and the relatively simple infrastructure requirements of deploying LMDS, it is an immediately available competitive alternative to cable that allows all consumers, regardless of social or economic level, to gain immediate access to the Information Superhighway. Also, due to its broadband nature, LMDS can offer a number of beneficial informational services to consumers, including public service, educational, medical and business uses. However, in view of the focus on the instant proceeding on alternatives to cable television service, these Comments will focus primarily

CellularVision system for LMDS is a high quality, low cost competitive alternative to cable service which, once licensed by the Commission beyond the New York market, can be rapidly deployed throughout the country and provide consumers with a highly competitive alternative source for video services. The CellularVision system has numerous advantages over cable, including:

- **Higher quality than cable:** LMDS can immediately deliver to consumers studio quality FM-analog video with compact disc quality audio, superior to the AM signal offered by coaxial cable. The CellularVision technology has sufficient quality for high resolution wide-screen television, and is able to provide a variety of interactive services.

- **Lower start-up and maintenance costs than cable:** Installation of a wireless LMDS system is less expensive and simpler than the costly fiber optic or coaxial cable infrastructures required by its wireline competitors; LMDS operation is consumer friendly; and maintenance is inexpensive and simple, since there are no wires to trace or replace, and only three components to maintain: the transmitter, a subscriber's four or six-inch square receive antenna and a set-top tuner. Also, the low power level required for LMDS allows for operation during power failures. As a result, deployment costs the LMDS provider approximately $300 per subscriber today — which is estimated to be approximately one-seventh the per subscriber price of deploying a wire-based cable system.

- **Greater consumer benefits than cable:** In comparison to cable, LMDS subscribers will receive a higher quality product, with superior service, and at a substantially lower monthly cost. For example, the studio quality 49-channel service currently offered by CVNY to its subscribers costs only $29.95 per month even though it includes two premium pay channels and numerous other tier channels that, in the aggregate, would cost between $10 and $20 per month higher when provided by New York area cable systems. Further, in addition to providing

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on that aspect of LMDS.

consumers with an alternative to cable service, LMDS can immediately reach areas which are not wired for cable; in the New York metropolitan area alone, this includes approximately 750,000 households, which often are located in lower income areas.

- **Greater program diversity and localism than cable:** Due to its cell-based configuration, LMDS enjoys the added flexibility of providing locally-focused programming and services on a cell-by-cell basis, which allows it to promote a diversity of programming that addresses the particular needs and demographics of subscribers in every cell. In this regard, LMDS uniquely serves the Commission's fundamental mandate to promote program diversity and localism. For example, as part of its 49-channel Brighton Beach system, CVNY offers a Russian programming channel targeted to that community's large population of Russian emigrants. Likewise, when CVNY expands its system into other ethnic strongholds in the metropolitan New York area, the cell-based, wireless LMDS system will be able to meet the special community and educational needs of discreet groups residing within such cells. Moreover, in a city's financial district, such as Wall Street, where there is an appetite for instant economic data from across the globe, an LMDS cell could provide a range of specialized services, including business-oriented video programming, economic data and telephony. Also, cells based within university or medical complexes can, in various interactive video/data/telephony contexts, be utilized to play an important role in educational and medical activities.

Not surprisingly, the public response to the promise of the CellularVision LMDS system has been enthusiastic and supportive. CVNY and the related company, Suite 12, have received numerous letters of interest and support from municipalities, educational institutions, civic organizations, individual consumers and equipment manufacturers throughout the United States expressing interest in the CellularVision LMDS technology. These letters provide concrete examples of the broad-based public need for a cable alternative that the high quality, low cost CellularVision platform for delivering video, telephony and data services affords. The letters from various

towns, civic organizations and consumers expressing frustration with their franchised cable operators and searching for viable competition are particularly relevant to the Commission's inquiry into competition to cable; a sampling of these letters is attached as Exhibit A.

Further, the soundness and immediate viability of the CellularVision technology as an alternative to cable has been validated by the investment in CVNY by leading companies in the communications industry, such as Bell Atlantic (4.9% non-managing general partner) and Philips Electronics North America Corporation, a U.S. subsidiary of Philips Electronics N.V. (2.5% insulated limited partner). In addition, the prominent Wall Street financial institution, J.P. Morgan Investment Management, has a financial interest in CVNY. Moreover, the response to the CellularVision system's ability to provide a high quality, low cost alternative to cable has also been affirmative, as reflected by several representative articles attached as Exhibit B.

As noted above, the CellularVision LMDS system currently is being operated on a commercial basis in the Brighton Beach area of Brooklyn, New York by CVNY. Pursuant to the only commercial license granted by the Commission for such services, CVNY offers a 49-channel package that includes a combination of premium channels, basic cable networks and broadcast stations comparable to those offered by its competitors, but at a cost of only $29.95 per month.

Through this operating system, CVNY is already demonstrating how

LMDS, a high quality, low cost video alternative to cable, can go "toe to toe" with the entrenched franchised cable monopolists which Congress and the Commission seek to subject to real competition. Moreover, aided by Bell Atlantic's recent minority investment in CVNY, and a related agreement whereby Bell Atlantic's management expertise will be utilized, CVNY currently is aggressively deploying its commercially licensed LMDS system and is expanding from its current base in Brooklyn throughout much of the metropolitan New York area.

Importantly, as the Commission seeks to implement the Administration's goal to establish an Information Superhighway, it must be vigilant to utilize the spectrum in a manner which not only generates maximum auction revenues but also ensures the widest possible access to the Information Superhighway. Universal access to that vital communications link of the 21st century will only be realized if spectrum-efficient, low-infrastructure cost, multipurpose communications services like LMDS are given a high priority by the Commission.

Finally, in order to promote the broadest base of competition to cable from the prompt licensing of LMDS, the Commission must pursue an auction scheme designed to maximize the involvement of small business, minorities and women in this new service. As Suite 12 stated in its Comments in the competitive bidding rulemaking, PP Docket No. 93-253, fundamental to this goal is the adoption of a realistic definition of "small business" — in the range

of either the $100 million or less in annual revenues recommended by the Administration in its recent statement with regard to Broadband PCS rules, or the $75 million or less in annual revenues suggested by Suite 12.[4] In either case, when dealing with small businesses, the Commission must combine a realistic definition of small business with provisions for modest down payments and long-term installment payments of winning auction bids in order to ensure that small businesses owned and operated by entrepreneurs, minorities and women can be a part of the exciting LMDS industry. By combining the prompt licensing of LMDS on a nationwide basis with realistic auction rules that will invite this type of small business involvement in the licensing of LMDS, the Commission will provide for vigorous marketplace-driven competition to cable television monopolies around the country, while simultaneously ensuring universal access to and universal ownership interests in the Information Superhighway.

Conclusion

The CellularVision technology for LMDS is not a theoretical concept; it is state of the art technology that allows CVNY to currently offer a high quality, low cost alternative to cable service on a commercial basis in New York. Once the Commission issues licenses for LMDS throughout the nation,

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[4] See Comments of Suite 12 Group in PP Docket No. 93-253, dated November 10, 1993, at page 11.

CVNY anticipates that like the cellular industry explosion of the mid-1980's, the communications industry and the public that will be served by LMDS will respond aggressively to the opportunity to immediately deploy LMDS systems throughout the country. For federal policymakers in Washington who have long been troubled by the monopolistic influence of cable, and currently are wrestling with the implementation of rate regulation due to the lack of competition to cable, LMDS provides a proven, high quality, low cost and immediate alternative service, which when licensed, will provide efficient marketplace-driven competition to cable.

Respectfully submitted,
CellularVision of New York, L.P.

By: 

Michael R. Gardner
Charles R. Milkis
William J. Gildea, III

THE LAW OFFICES OF
MICHAEL R. GARDNER, P.C.
1150 Connecticut Ave., NW
Suite 710
Washington, DC 20036
(202) 785-2828

Its Attorneys

June 29, 1994

Exhibit A

Letters from towns, civic organizations and consumers interested in LMDS as a competitive alternative to cable

EX PARTE OR LATE FILED

BRIDGEWATER STATE COLLEGE
Bridgewater, Massachusetts 02325

December 20, 1993

Mr. William Caton
Acting Secretary
Federal Communications Commission
1919 M Street N. W., Room 222
Washington, D. C. 20554

Re: Proposed Rule Making
CC Docket No. 92-297
PP Docket No 93-253

Dear Mr. Caton:

The Town of Bridgewater has requested assistance with the competitive bidding licensing procedure for Local Multi-point Distribution Service (LMDS). This letter is to indicate the strong support of Bridgewater State College for the application. The College has been working closely with the town in development of its proposal and we feel that allocation of a license to the town would represent a major positive federal initiative in support of the effective and efficient uses of emerging technologies for the betterment of the people of the United States. Because of the unique opportunity presented by the relationship between Bridgewater State College and the Town of Bridgewater, there is every opportunity for the FCC to promote strong regional collaboratives in support of President Clinton's educational and economic development initiatives.

Bridgewater State College currently is constructing the John Joseph Moakley Center for Technological Applications. This Center is dedicated to developing models of applications of electronics technologies to pre-kindergarten though collegiate curricula and to directly supporting the economic development of the southeastern Massachusetts region. Under the auspices of the Moakley Center, the College will be developing extensive telecommunications and video capabilities. We also will be seeking licensure of two satellite transmission dishes that will allow both national and international two-way video and data communications. These capabilities are specifically designed to support the educational needs of students and teachers and to support development of the economic capacity of this region of New England.

Within this context, the inclusion of LMDS technology in the College's programming mix will be of critical importance. Should the Town of Bridgewater receive a license, the College would have access to an extensive distribution system for educational programming. It is planned that the College would make available by this medium not-for-profit programming for schools, educators, businesses, and government officials. Because of the relative low cost of operating in this medium, the College would be able to offer programming at modest cost to the client. Additionally, because of the strong institutional commitment to evaluation and assessment, College programming distributed across the LMDS would be rigorously reviewed and results would be made available nationally.

Please note that Bridgewater State College is a state agency and a 501c3 not-for-profit. College programming, such as described above, has received support from various federal and other sources including the U. S. Department of Energy, the National Science Foundation, the U. S. Department of Education, NASA, and private sources. The College is rapidly becoming known for its program of developing uses of technology across the collegiate and K - 12 curricula, and as a leader in New England in educational assessment.

On behalf of Bridgewater State College, I strongly endorse the Town of Bridgewater's request for exemption from the proposed auction process; that such an exemption be granted for municipalities interested in providing non-commercial, educational programming; and that municipalities be granted the right to provide educational programming in relation to regulation #152 within a radius of fifty (50) miles in the 28 GH2 band.

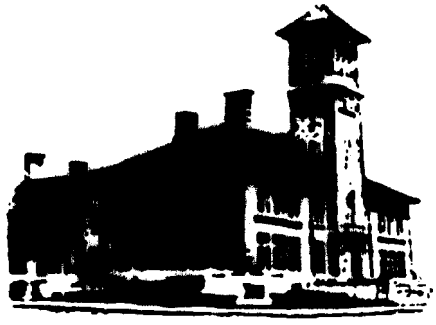
If I can provide any additional information, please feel free to contact me.

Sincerely,

Adrian Tinsley
President

C: Board of Selectmen
Congressman Barney Frank
Congressman John Joseph Moakley
Senator John Kerry
Senator Edward Kennedy

CLINTON, MASSACHUSETTS 01510



(508) 365-9745 Phone
(508) 368-7672 Fax

November 6, 1993

CELLULARVISION OF NEW YORK
CELLULARVISION TECHNOLOGIES AND
TELECOMMUNICATIONS INC.

Mr. Vahak S. Hovanian
Mr. Shant S. Hovanian
Mr. Bernard Bossard
Dag Hammarskjold Boulevard
Freehold, New Jersey 07728

Dear

Dear Vahak:

This communication is a serious Letter of Inquiry from the Clinton Cable-TV Advisory Committee in the central New England town of CLINTON, MASSACHUSETTS.

We are firmly convinced WIRELESS IS THE FUTURE!

Clinton would make a model community for a future CellularVison site as your patented technology expands.

We serve 10,000 subscribers within 4-towns in a 5 mile circular-hub. Twenty seven high-tech corporations are within 10 miles of our community, just west of Boston.

With our cable license renewal scheduled for 1996, the CCAC is seriously searching for alternative competition and a wireless "high-speed-data-access" in/out of our business sectors.

Please advise us as to what opportunities might become available to Clinton, Massachusetts in the next 36 month window.

And, what steps we should take to get a working relationship with CellularVision and wireless technology for the future. Each committee member has received and read the public service packet from CellularVision.

Sincerely,

Richard Lowell Harding

Richard Lowell Harding
Clinton Cable-TV Advisory Committee

GREENCROFT HOMEOWNERS ASSOCIATION
703 PELHAM ROAD
NEW ROCHELLE, NEW YORK 10805
OCTOBER 18, 1993

Dear Sirs:

I am the Treasurer of the Greencroft Homeowners Association ("HOA"). The HOA is made up of approximately 160 condominium units, located at 701 - 703 Pelham Road in the City of New Rochelle.

At the present time, we are dissatisfied with the cable television service supplied by TCI of Westchester. The HOA is seeking out other companies to supply us with cable television service. I have attached a cost card of our present servive. We would appreciate if you can submit a proposal to the HOA at the above address. If you have any questions, I can be reached during the day at (212) 891-4214 and at night at (914) 654-1736. I am looking forward to hear from you shortly.

Sincerely yours,

Neal Quall, Treasurer
GREENCROFT HOMEOWNERS ASSOCIATION

TOWN of GREENBURGH
OFFICE OF THE SUPERVISOR
Post Office Box 348, Elmsford, New York 10523
(914) 993-1500 Office (914) 993-1505 Fax (914) 993-1510 Home

PAUL J. FEINMAN
Supervisor

August 9, 1993

Yehuk Kevenaian
Cablevision Systems of New York Inc.
218 Village Hall
Freehold, New Jersey 07728

Dear Mr. Kevenaian:

This letter is being written to invite your company to submit a proposal to the Town of Greenburgh to provide local to local competition with TCI Cable TV. Residents of the Town of Greenburgh are very upset with the lack of cable TV competition and we are aggressively seeking additional companies to provide residents with a choice. We recently had a meeting that attracted over 300 residents who complained that they are fed up with the frequent outages, poor service and high cable TV rates. I would be happy to meet with you at your convenience to discuss why the Town would like to be among the first communities in the Metropolitan area that would have cable TV competition. Many, many thanks.

Sincerely,

Paul

Paul J. Feinman
Town Supervisor

PJF/lam

cc: Arthur Wirkin
Maureen Huddin
Marty Greenberg

AUG 18 1993

DR. ROBERT GALTON
199-08 28TH AVENUE
BAYSIDE, NEW YORK 11358

Jan 29, 1993

Mr. Phanit Hovanian
Cellular Vision of New York, Inc.
Freehold, N.J.

Dear Mr. Hovanian,

The December 11, 1992 issue of the New York Times discussed your new microwave TV system.

I live in Bayside (Queens), New York and would like to know if your system could be made available to me. I am one of five families in a block of houses that are not able to receive cable TV because the telephone pole that services our block is on the property of a person on another block (at right angles to ours) and he refuses to allow the cable company on his property.

I would appreciate hearing from you on this. Thank you.

Sincerely,

Robert Galton

PROSPECT PARK SOUTH ASSOCIATION

BROOKLYN • NEW YORK

A LANDMARK DISTRICT ON THE NATIONAL REGISTER OF HISTORIC PLACES

September 29, 1993

Mr. Shant Hovnanian, CEO
CellularVision
Suite 12, Village Mall
Freehold, NJ 07728

Dear Mr. Hovnanian;

In August I read with great interest the newspaper articles about your company and wireless cable systems. It is a very timely issue for us since we are facing cable installation here in Prospect Park South.

Prospect Park South is a Landmark District on the National Register of Historic Places and part of Flatbush, Brooklyn. It is bordered by Church Avenue, Coney Island Avenue, Beverly Road, and Marlborough and Buckingham Roads. It is a neighborhood of just over 200 large single-family detached homes and two apartment buildings. We are very proud of our park like landscape which was an integral part of the original plan at the turn of the century and part of what makes this neighborhood historically significant. All Utility lines are underground and we have no telephone poles. Current cabling plans under consideration require extensive exposed equipment with a very high aesthetic cost. We wonder whether the newer wireless technologies may be a possible alternative.

Residents of Prospect Park South have waited very patiently for access to cable television. It is important that we consider all the options available to us now or those that may be available in the near future so that we can make an informed decision about the most appropriate installation.

We are very interested in learning if your system may be an appropriate one for our situation. I look forward to hearing from you or your representative at your earliest convenience. Thank you for your attention to this matter.

Sincerely yours,

Karin Nye

Karin Nye
941 Albemarle Road
Brooklyn, NY 11218
(718) 284-1781

Exhibit B

Atricles from the press regarding the CellularVision technology for LMDS

The New York Times

FRONT PAGE

Reprinted From Friday, December. 11, 1992

A New Microwave System Poses Threat to Cable TV

By EDMUND L. ANDREWS
Special to The New York Times

WASHINGTON, Dec. 10 — The Federal Communications Commission approved a new microwave technology today to transmit simultaneously dozens of channels of television, telephone calls and large amounts of data.

The system, which would use superhigh-frequency radio signals to deliver up to 49 television channels, could pose a threat to the virtual monopoly that cable television systems enjoy today in most cities. The system was recently introduced, on an experimental basis, to homes in Brighton Beach, Brooklyn.

One big advantage to the technology is that it avoids the need to spend millions of dollars to lay cables to every home in a city, a cost that is passed on to cable television subscribers.

Once Considered Unusable

The main innovation of the new technology is its use of extremely high-frequency microwaves to transmit information. Until now, these radio frequencies — far higher than the UHF and VHF signals commonly used in television broadcasting — have been considered unusable for anything more than transmitting data between two sites in full view of each other.

The new technology was developed by a Freehold, N.J., start-up company called Cellular Vision of New York Inc. Company officials said the technology would make it possible to undercut, by more than half, the prices of cable television companies, which deliver their signals over wires.

Impressed by the results from two years of technical tests, the F.C.C. today proposed allocating a big block of superhigh radio frequencies for the new technology and offering licenses to two companies in each market. Recognizing Cellular Vision as the pioneer, the commission tentatively gave it the chance to choose between a license for the metropolitan New York or Los Angeles areas. Licenses for other markets will probably be issued through a lottery process, perhaps as soon as next summer.

The developers of the technology assert that they can reach almost every site in a metropolitan area, in part by bouncing signals off buildings and other objects until they reach their ultimate destination.

In Brighton Beach, the company began offering a package of

Microwave System May Threaten Cable TV

several dozen cable television channels, including Cable News Network, ESPN, MTV and two movie channels, for $39.95 a month. Customers receive signals over small, flat antennas about six inches square that can be placed indoors or outside. The company said a similar package of channels offered by the Cablevision Systems Corporation, the cable company that serves Brighton Beach, would cost $60 a month.

One Brighton Beach resident enthusiastically praised the new service. The picture quality is "just about perfect, much better than what I had before," said Michael Boyars, the co-owner of a heating and air-conditioning company who began subscribing to the service in June. "The reception has been rather phenomenal," he added. "I can't figure out how it works."

Company officials contend that the new system approaches the capabilities of fiber-optic cables, the hair-thin strands of glass that relay vast quantities of data as high-speed pulses of light.

"This is basically giving you fiber optics to the home, and it is interactive," said Shant Hovnanian, a founder of Cellular Vision. Interactive refers to a system's ability to provide two-way communications, so users could exchange computer data, for example. The Brighton Beach system does not currently offer such services.

The technology itself was invented and patented by Bernard B. Bossard, an electrical engineer and entrepreneur who specialized in microwave communications equipment. Mr. Bossard had teamed up in the mid-1980's with Mr. Hovnanian and his father, Vahak Hovnanian, a large real estate developer in New Jersey. The Hovnanians, who were already using big satellite dishes to offer television service to homes they built, provided financing for Mr. Bossard's research.

The Cellular Vision system transmits television at frequencies of 28 gigahertz, or 28 billion cycles of radio energy a second, which is so high in the radio spectrum that almost no one uses it.

But these super-high frequencies usually require that an unobstructed line of sight be established between the transmitter and receiver. Mr. Bossard said the frequencies also tend to be unstable, so that adjacent channels often interfere with one another. The problem is a little like driving high-speed motorboats side by side; the waves tend to overlap one another.

Company officials say they solved the line-of-sight problem by taking advantage of the fact that signals at such high frequencies ricochet off many types of obstacles without losing much of their quality. The system's transmitter sends out signals in all directions so they bounce off many surfaces until they reach individual receivers.

Steve Hart for The New York Times

The picture quality is "just about perfect, much better than what I had before," said Michael Boyars, a Brighton Beach resident, of a new microwave technology that can deliver dozens of television channels.

In addition, the new system borrows technology from the cellular telephone industry to divide a big city into smaller "cells" — areas that are each served by a separate transmitter. Ordinary television broadcasters can use only one transmitter in a city, because using multiple towers would make signals hopelessly jumbled.

F.C.C. officials said the new system avoided that problem by having adjacent cells orient the angles of their signals differently. The result, they said, is that receivers in one part of town cannot pick up signals that stray over from another area.

Prospects Are Uncertain

But commercial prospects for the new technology remain entirely unclear. For one thing, the system has not yet proved itself in a dense urban area with many customers. Beyond that, the system will have to compete against many other new technologies being developed by the cable industry itself and by new satellite companies. Just last week, Tele-Communications Inc. of Denver announced that it would begin installing technology to offer as many as 500 channels to individual homes.

Some experts cautioned that there may be problems with the Cellular Vision system.

"Bouncing off buildings can be a big benefit of using these frequencies, but it can also be a severe limitation," said William Utlaut, associate director of the Institute for Telecommunication Sciences in Boulder, Colo., a research arm of the Commerce Department. The problem, Mr. Utlaut said, is that bouncing signals can cause the "ghosts" that have always marred ordinary broadcast television.

But Mr. Bossard said that was not a problem, because an antenna would be capable of receiving only one of the many signals bouncing around. The company hopes to erect transmitters throughout the New York metropolitan area by mid-1994; it also hopes to apply for licenses to serve other cities.

Cable Companies Prepared

Cable television executives said yesterday that they were unfamiliar with the technology but were prepared for greater competition.

"It's another form of competition that we're prepared to face," said Carole Shandler, a spokesperson for Cablevision Systems, based in Woodbury, L.I., which operates cable franchises in many parts of the New York metropolitan area.

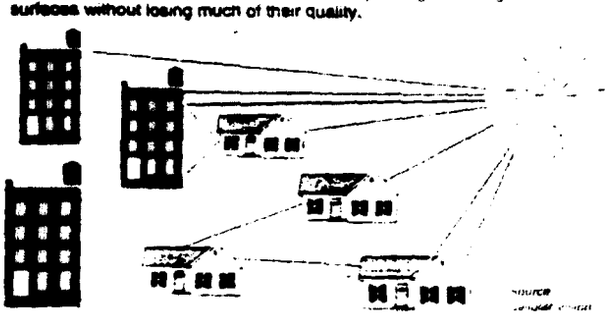
Robert Thomson, a senior vice president of Tele-Communications, the nation's biggest cable operator, said cable systems would probably hold up well, given their own use of new technologies to offer interactive services and hundreds of channels of programming.

A new cable television law, passed by Congress in October, could give new competitors an important boost in acquiring popular programming. The law forces companies that both operate cable systems and produce programs — like Time Warner's Home Box Office or the Discovery Channel, which is partly owned by Tele-Communications — to make their shows available to competitors on the same terms as they are offered to regular cable outlets.

'Using High Frequency to Transmit

Cellular Vision uses superhigh-frequency microwaves to transmit television signals as well as telephone service and large volumes of data over the airwaves.

Such superhigh-frequency microwaves usually require an unobstructed line of sight between transmitter and receiver. The company solved the problem by taking advantage of the fact that the waves ricochet off surfaces without losing much of their quality.



Receivers for such high-frequency waves can be as small as [illegible] square

The system can also use more than one transmitter in a city by modulating the signals sent to one vertically and an adjacent one horizontally

Source [illegible]

The New York Times

Cellular technology may rival fiber-optic networks

By Joanie M. Wexler
WASHINGTON, D.C.

A high-speed cellular technology is emerging that could ultimately usurp fiber-optic cabling for carrying heavy-duty telecommunications applications. Its success, however, hinges on a few regulatory "ifs."

The Federal Communications Commission (FCC) this month approved the use of "CellularVision," a technology patented by CellularVision in Freehold, N.J., for running high-bandwidth applications over the nation's airwaves. Traffic traveling in CellularVision's 27.5- to 29.5-GHz FM radio band could include videoconferencing, high-definition television, medical imaging, multimedia and high-speed data, according to CellularVision inventor Bernard Bossard.

Bossard said uncompressed information could travel at about 1G bit/sec. and that the technology requires a transceiver and modem at each communicating site.

How the FCC will allocate the CellularVision spectrum remains a question--and one that will likely determine the usefulness of the technology to the business user. Benefits will depend on "how the FCC decides to divvy up licenses geographically, how many licenses are granted and how much spectrum each licensee gets," said Brian Moir, a partner at Fisher, Wayland, Cooper and Leader, a Washington, D.C., law firm that provides counsel to the International Communications Association user group.

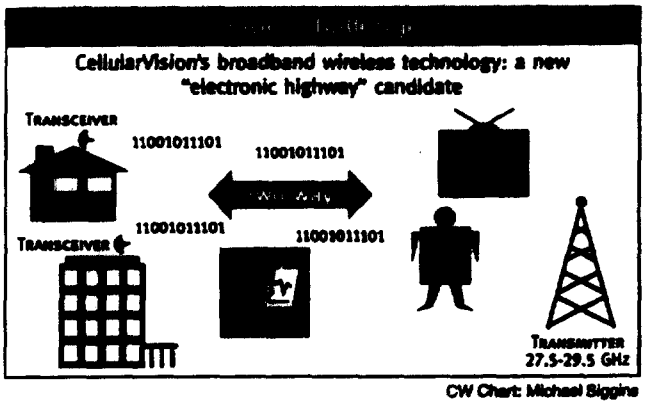
Nationwide licensing

For example, if the FCC issued a single nationwide license, it would result in a seamless network for users, who would not have to contract with several carriers for interconnecting wireless segments. This could solve some of the problems faced by today's analog cellular telephone networks, where rates remain high because the spectrum is licensed in local chunks "and the interconnect charges between service areas are a fortune," Moir explained.

But the downside of a single license "is that the resources required to build a system like that [nationwide] are significantly higher," he said.

These issues parallel those with emerging personal communications networks (PCN), which will someday issue nomadic users a single, mobile phone number. One PCN proposal to the FCC from MCI Communications Corp. is to allocate spectrum to a small number of consortia nationwide in order to deliver both the seamlessness and the resources required to fund the network infrastructure [CW, Nov. 16].

Depending on how the specifics play out, CellularVision could fill a gap in the growing mobile computer market: Today's relatively slow (19.2K bit/sec.) wireless wide-area networks are frustrating users who are accustomed to local-area network speeds. Also, users such as John Faccibene, vice president of telecommunications at Garban Ltd., a New York brokerage firm, said he sees CellularVision's capabilities as providing the bandwidth and flexibility for creating virtual offices or trading floors, particularly in a disaster recovery situation.



CW Chart: Michael Siggins

"During the floods here in New York City, a lot of companies lost their trading rooms," he said. "Imagine if they had ability to move to another location via wireless."

A high-speed wireless network could preclude the expensive and time-consuming task of laying fiber to all doorsteps to make services ubiquitous, added Andrew M. Seybold, publisher of the "Outlook on Computing" newsletter. He said that in an urban area, "cable is probably cheaper because I can run a cable down a major street and pull drops off of it. Each drop would be less expensive than having a separate transmitter and receiver at each user location."

However, he said, "the cable companies cannot make their systems two-way [interactive] without a tremendous upgrade."

Bossard said several Bell telephone companies have expressed interest in CellularVision. An Ameritech Co. spokesman confirmed that his company has "had some conversations with CellularVision, but it is too early to assess how it might fit into the overall scheme of wireless communications."

'Better' cellular

Each CellularVision cell spans 6 to 8 miles in diameter. When transmitting among cells, CellularVision reuses the same frequency so the full 2 GHz is continually available. This differs from today's analog cellular phone network, through which communications change frequencies from cell to cell. This reduces the amount of bandwidth available. CellularVision rivals fiber-optic capabilities, transporting traffic at 1G bit/sec. speeds.

THE WALL STREET JOURNAL

MARKETPLACE

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MARKET & MEDIA

FCC Proposes Using New Technology To Send Video and Voice by Airwaves

By MARY LU CARNEVALE
Staff Reporter of THE WALL STREET JOURNAL

WASHINGTON – The Federal Communications Commission proposed using airwaves to deliver video and voice in what could be competition for both cable television and local telephone monopolies.

The new technology could open the way for local telephone companies to provide two-way video services and other advanced telecommunications – including movies on demand, video teleconferencing, and telecommuting services. Other companies, such as cable TV operators, could turn around and use the technology to compete with phone companies.

"The full potential of this technology has yet to be explored," said Robert Pepper, head of the FCC's Office of Plans and Policy. "But it holds the very exciting prospect of introducing new services in both the video and the telecommunications marketplaces."

The commission voted, 5-0, to seek public comment on its plan to set up the service in the 28 gigahertz band – a frequency that once was considered too high to be useful. Under the FCC plan, licenses would be awarded to two operators in each of 489 regions across the country. Every operator would receive a 1000 megahertz block of spectrum.

The plan grew out of a request by Suite 12 Group, a Freehold, N.J., partnership, that developed a system to deliver high-quality video over a network that uses microcells to transmit signals to a flat, four-square-inch antenna mounted either inside or outside a house window. The partnership recently began offering 49 channels of cable TV programming in Brooklyn's Brighton Beach neighborhood for $29.95 a month, according to the company.

Shant Hovnanian, a company partner, said the system can be installed for about $350 a subscriber, less than half the cost of building a typical cable TV system, and a fraction of the cost of stringing optical fiber to homes. The system, known as Cellularvision, is based on patented technology invented by Bernard Bossard, another partner.

Several telephone company and cable TV officials reached yesterday said that Suite 12's technology and the FCC action was a surprise. "We've tried to keep it quiet until the FCC vote," Mr. Hovnanian said, adding that contentious Washington proceedings can stifle new technology.

Eventually, Mr. Hovnanian said, compression technology, which shrinks the amount of data needed to transmit video signals, would permit video cellular systems to carry hundreds of channels. Subscribers could be linked through phone lines or cable networks to "video jukeboxes" that store thousands of movies, TV programs and other offerings.

The FCC also voted to award Suite 12 a so-called pioneer's preference—a licensing advantage given to companies that create services. But the award was for the license Suite 12 already holds for the New York area, rather than the license it sought for Los Angeles.

Separately, the agency proposed adopting a Motorola Inc. system as the standard for AM-radio stereo broadcasting. The FCC said that about 660 of the nation's 5,000 AM stations already have converted to stereo and that 90% of the stereo stations use the Motorola system.

The commission was directed under a new law to adopt a single AM stereo standard, and the proposal is the first step in that process. Under the proposal, stations using other stereo systems would have to stop using them a year after the rules go into effect next year.

Reprinted from:
ELECTRONIC MEDIA

Cable TV competitors leap to get foot in door

By WAYNE WALLEY
NEW YORK BUREAU CHIEF

New York—Two new TV services took advantage of recent Federal Communications Commission rulings last week, setting up more potential competition for the cable industry.

CellularVision last week started rolling out its broadband over-the-air alternative to cable delivery in the Brighton Beach section of Brooklyn with plans to offer the microwave service in other areas here in the next 18 months.

The rollout followed the FCC's Dec. 10 decision to reallocate spectrum for delivery of TV and telecommunications services by a super-high FM radio signal and grant the sole license for the New York metropolitan area to CellularVision.

In addition, Bell Atlantic last week said it will install fiber-optic and coaxial cables to carry telephone and "video dial-tone" service for Future Vision of America Corp. in Downingtown, Pa.

Future Vision plans to use the system to offer packages, including 124 TV services, to 38,000 homes in Dover Township, N.J.

The Bell Atlantic move takes advantage of new FCC rules adopted earlier this year that allow telephone companies to offer a video dial-tone for other companies that want to distribute TV programming.

The two developments, though unrelated, are the latest in a series of new delivery-system ventures.

Initially, CellularVision says, it plans to target densely populated areas that don't have cable service, using its new microwave system to deliver as many as 100 channels.

"There are enough customers to address that aren't passed by cable to make us thrive," said Shant Hovnanian, a partner in CellularVision of New York.

"I won't say we will not go after cabled areas, but there is enough of a market share that is not cabled to make a business."

Mr. Hovnanian said the company currently has 200 customers in Brighton Beach and has ordered 100,000 of the 4½-inch square antennas it uses in addition to the necessary transmitters and other equipment.

The company has signed contracts with MA/Com and Alpha Industries for antenna production and with Hughes Aircraft and Catel Corp. to manufacture transmitters and transmitter components.

"This can be the telecommunications system of the future and be inexpensive as an alternative to fiber optics because it can deliver what fiber can deliver at a fraction of the cost," Mr. Hovnanian said.

The CellularVision system, invented by Bernard Bossard, a partner in the company, uses a single transmitter to serve a 28.5 square-mile "cell" and can be linked to adjacent cells across an area with point-to-point transmitters.

The signal, which uses a short wavelength in FM format in the microwave band, is received in the home or office by the 4½-inch square flat-panel antenna, which can be mounted on a windowsill or outside a window.

The antenna is then connected to a TV set-top converter by coaxial cable.

Currently, CellularVision is charging customers a $50 installation fee to hook up the special antenna and $29.95 for 49 channels, including Showtime and The Movie Channel.

In Dover Township, Bell Atlantic is planning to install a combination of fiber-optic and coaxial cables to make its video dial-tone TV service available through Future Vision.

Future Vision is expected to offer customers 124 channels of programming that can be customized into packages of 60 channels for each neighborhood.

It will potentially be able to allow subscribers to order services per day.

The company has yet to set a price for its TV services, but it is likely to be competitive with the average $33 per month charged by Adelphia Cable, the holder of the area's local cable franchise.

Bell Atlantic, which is based in Philadelphia, last week said it hopes to make similar deals with programming partners in other cities.#

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1992

Los Angeles Times

BUSINESS

TV's New Frontier

FCC Proposes Cellular-Style Delivery System

By JUBE SHIVER Jr.
TIMES STAFF WRITER

WASHINGTON—The Federal Communications Commission on Thursday proposed opening the nation's airwaves to a breakthrough technology that could provide a lower-cost alternative to existing cable television, fiber-optic and telephone services.

Already in operation on a trial basis in Brighton Beach, N.Y., the new technology uses super-high-frequency microwaves previously believed to be too weak and volatile for significant commercial applications.

A Freehold, N.J., company called Cellularvision patented the new technology, which mimics the operation of cellular phone systems. Like cellular, it uses an array of transceivers that can provide, simultaneously, 41 or more channels of cable television; local telephone service; video conferencing, and even interactive, two-way video communications.

The commission signaled its intent on Thursday to authorize full-scale development of the technology by next summer in 489 local service areas across the nation. New licenses for operating the local systems would be awarded by lottery, an agency official said.

The FCC invited industry officials to comment on the potential impact of the plan.

Experts say the new system could pose a significant competitive threat to cable—as well as even newer video technologies, such as direct broadcast satellite. The new system can deliver services to homes that can't be reached by cable, they note. And its compact disc-sized antenna is much smaller than those of many other video services.

"This could be significant competition to the cable industry," said Cheryl Tritt, chief of the FCC's common carrier bureau, which is overseeing the new technology.

"It's a technology worth watching," added John J. Sie, chairman of Encore Media Corp., a Denver-based cable program supplier. "It seems to have a much lower cost" of operation than cable and other video technologies.

A cable industry spokeswoman, nevertheless, seemed unfazed.

"Cable television developed and legitimized the concept of subscription television, so it's no surprise to us that we would face competition from a variety of sources," said Peggy Laramie, a spokeswoman for the National Cable Television Assn.

The new technology is known as "local multi-point distribution system," or LMDS. It is so little known that few industry officials understood it well enough Thursday to speculate how it might affect the communications industry, which has erupted with a number of

Continued

A Growing Array of Technologies

Technological advances are opening the door to a broad range of new telecommunications services:

Local Multi-Point Distribution: Given the go-ahead Thursday by the FCC, this system uses super-high-frequency microwaves to beam cable signals, local telephone service and interactive video to a compact disc-sized home antenna. A pilot project is operating in Brighton Beach, N.Y.

Cellular Cable: Can deliver scores of cable TV channels and other telecommunications services to six-inch, window-mounted antennas. The technology uses very-high-frequency microwave signals that are beamed from multiple locations within a single service area.

Wireless Cable: Another microwave-based technology, wireless cable systems are already emerging in many cities across the country. But they cannot be used in all areas because of lack of frequencies, and they're subject to interference from building and trees. They also require a larger receiving dish and have less capacity than the cellular cable technology.

Traditional Cable: Most major cable operators plan to use digital video compression systems to dramatically increase the capacity of their systems. The nation's largest operator, Tele-Communications Inc., is working on a system that will carry 500 channels. Digital systems don't require changes in the cables themselves, but do require expensive new converter boxes.

Telephone Networks: New technologies make it possible to send a few channels over existing copper phone lines. But phone companies are installing fiber-optic cables in some areas that will make it possible to increase both quality and capacity. It will be years before fiber-optics reaches all the way to the home.

Satellites: Today a large and expensive receiving dish is required to capture TV signals from a satellite. In the future, the size of the dish will be dramatically reduced. Combined with digital transmission technology, such satellite systems will be able to deliver hundreds of channels to pizza-sized, window-mounted dishes.

—JONATHAN WEBER